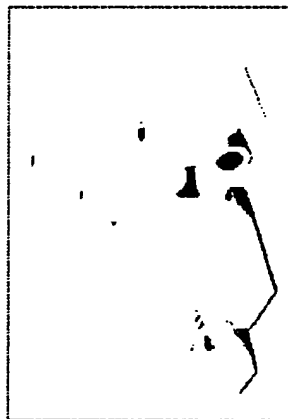


THE MEDIUM IS YOUR MESSAGE

Thermal paper, labels, tickets and coupons are now the medium of choice for many critical applications. Thermal media are available in both standard rolls and custom configurations for all our print mechanisms, subassemblies and stand-alone printers. The quality of thermal media has a direct effect on performance and reproduction quality, so make sure to pick your supplier carefully.



Selecting the right media is essential for generating clean images, minimizing wear, and avoiding residue build-up, paper sticking, and print head deterioration. Different applications require different media. The proper match of application, printer and media is integral to providing the total thermal printing solution.

Since both the base paper and thermal coating interact with the print head, the proper relationship between the media and the head is crucial for selecting the right product to fit the requirements of each application. We can help you choose the proper stock to ensure quality and performance, which will save you time and money over the long haul.

SII SECURE



All our printers are backed by the exclusive SII Secure commitment to total customer support. SII Secure means engineering and design assistance, software customization, comprehensive technical documentation, training, after-sale support, and strong factory warranties. Our goal is to help each of our customers achieve optimum performance and reliability from their thermal printing systems.

Seiko Instruments USA Inc.

Micro Printer Division

2990 Lomita Blvd.

Torrance, CA 90505 USA

Phone: (800) 553-6570

FAX: (310) 517-8154

E-mail: silumpd.id@salesupport.com

www.siiprinters.com

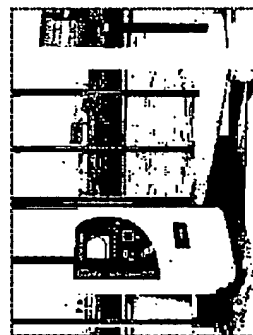


Seiko Instruments Inc.

Specifications subject to change without notice. ©2003 Seiko Instruments USA Inc.
SII021 10/03 • 1.5M • Printed in USA

DIRECT THERMAL PRINTING

BEST AVAILABLE COPY



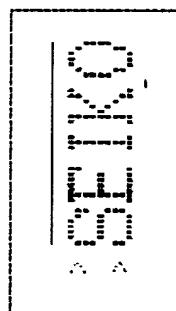
Seiko Instruments Inc.
www.siiprinters.com

TAKE THE DIRECT ROUTE TO QUALITY AND RELIABILITY

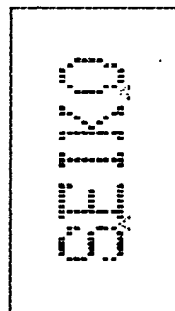
Versatile

Direct thermal printing offers years of reliability, minimal maintenance and consistent operation for a wide variety of applications including kiosks, parking, vending, lottery, warehousing and inventory management, mobile and field work, measuring instruments and analyzers, medical devices and healthcare, POS, receipts, and more.

Two Approaches



Print head moves across paper

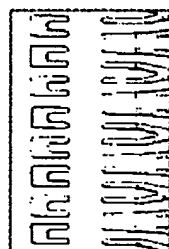


Paper moves across print head

Precise

Miniature heating elements, dots 1/200 of an inch in size or smaller, are constantly pressed against specially treated paper. Heating of

specific elements causes a thermochemical reaction to take place, allowing letters, numbers or graphic images to be printed very quickly and clearly. It's ideal when speed, quality, size, portability, low power consumption, battery operation and versatility are important factors.



Very small heating elements produce highly accurate characters, graphics and bar codes.

Cost Effective

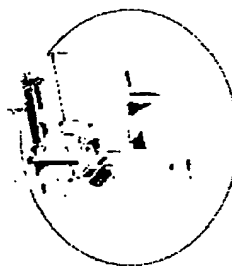
In contrast, the ink-based, ribbon approach of thermal transfer and impact (dot matrix) printing has two significant drawbacks. As the ribbon wears, the quality of the imprint decreases until no image is produced. And there is the ongoing expense of buying ribbons as a consumable item.

Direct thermal printers also use fewer moving parts, so they require next to no maintenance and are highly reliable. They operate on low power levels to save energy, and they are quieter than ribbon-based systems. And the continuous form of thermal stock virtually eliminates paper jams.

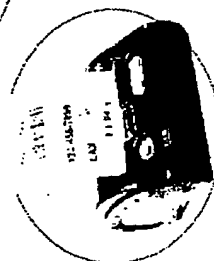
With a long service life, a trouble-free design and nearly maintenance-free operation, direct thermal printing offers the lowest cost of ownership of any printing technology.

SELECT THE OPTION THAT FITS YOUR NEEDS

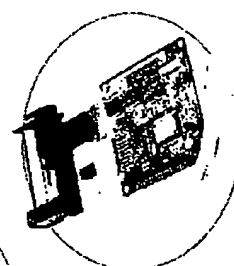
When space is tight or a custom design is required, printer mechanisms provide a high degree of flexibility. Other components such as a paper holder and controller board can be placed virtually anywhere. Value-added subassemblies are also available that include mechanism, controller board, paper cutter, paper holder and cabling all in one self-contained unit ready for installation. And portable printers deliver complete capabilities in mobile packages, including wireless IR as well as *Bluetooth*® and IEEE 802.11 RF communications.



Value-Added Subassemblies



Wireless Mobile Printing



Total Design Solutions

Dye-sublimation printer

From Wikipedia, the free encyclopedia

A **dye-sublimation printer** (or **dye-sub printer**) is a computer printer which employs a printing process that uses heat to transfer dye to a medium such as a plastic card, printer paper or poster paper. The process is usually to lay one color at a time using a ribbon that has color panels. Most dye-sublimation printers use CMYO colors which differs from the more recognised CMYK colors in that the black dye is dispensed with in favour of a clear overcoating. This overcoating, (which has numerous names depending on the manufacturer), is effectively a thin laminate which protects the print from discoloration from UV light and the air while also rendering the print water resistant. Many consumer and professional dye-sublimation printers are designed and used for producing photographic prints.

Sublimation is when a substance transitions between the solid and gas states without going through a liquid stage, (Dry Ice is an example). In a dye-sublimation printer the printing dye is heated up until it turns into a gas at which point it diffuses onto the printing media and solidifies. Prior to printing the dye is stored on a cellophane ribbon. The ribbon is made up of three colored panels, (Yellow, Magenta and Cyan), and one clear panel which holds the lamination material for the overcoating. Each colored panel is the size of the media that is being printed on, (for example, a 6" by 4" dye sub printer would have 4 x 6" by 4" panels). During the printing cycle the printer rollers will move the paper and one of the colored panels together under a thermal printing head, (the head is usually the width of the media being printed on in portrait mode), where upon tiny heating elements on the head change temperature rapidly laying different amounts of dye depending on how hot they are. This process continues until the paper is covered by the first color at which point the ribbon is wound on to the next color panel and the paper is partially ejected from the printer, read for the next cycle. This is repeated twice more until all three colors have been laid onto the media leaving a completed image. The final cycle lays the laminate layer which protects the dye from resublimating when handled or exposed to warm conditions.

Comparison with Inkjet printers

One of the main advantages that dye-sublimation printing has over Inkjet printers is its ability to print a superior range of colors. The Ink in inkjet printers cannot change color and it is also opaque. This means that inkjet printers simulate a range of colors by varying the size of the colored dots against the white background of the printing media and also by placing the colored dots next to each other, (they cannot be laid over each other). Dye-sublimation printers are able to change the temperature of the thermal elements in its head 256 different degrees and therefore can produce 256 different shades of each of the colored panels. More importantly, due to the properties of the dye, the dye is transparent and colors can be laid on top of each other, combining to produce 16.77 million different shades. Coupled with the final laminate coating, prints from a dye-sublimation printer look as if they have been developed from a photochemical lab.

Another advantage over inkjet is the prints are dry and ready to handle as soon as they exit the printer. The printing process is also fairly quick as the thermal head doesn't have to sweep back and forth over the paper. As the dye never enters a liquid phase, the whole printing cycle is extremely clean. There are no liquid inks to clean up, nor any heads to get clogged making dye-sublimation generally a more reliable technology over Inkjet printers.

Dye-sublimation printers have some drawbacks over their inkjet rivals. Each of the colored panels of the ribbons, and the thermal head itself, match the size of the media that is being printed on. This means that dye-sublimation printers cannot match the flexibility of the inkjet printers ability to print on a wide range of media. Also, dye-sublimation papers and ribbons are sensitive to skin oils, (which interfere with the dye's ability to sublimate from the ribbon to the paper), and must also be free of dust particles which can lead to small colored blobs appearing on the prints. Most dye-sublimation printers have filters to reduce the likelihood of this happening, and a speck of dust can only affect one print as it becomes attached to the print during the printing process.

Previously, the use of dye-sub printing had been limited to Industrial or High-End Commercial Printing. Alps produced the first quality dye-sub printers for home consumers in the \$500-1000 price range, bringing dye-

Dye-sublimation printer - Wikipedia, the free encyclopedia

Page 2 of 2

sublimation technology within the reach of a wider audience. Now there are many dye-sublimation printers on the market starting from as low as \$100 made by a range of manufactures such as Canon, Sony, Sagem, HiTouch Imaging, Mitsubishi Electric and Kodak, (among others). Mitsubishi Electric have also incorporated this technology in a range of kiosk-style terminals marketed specifically for supermarket/newsagent customers who want lab prints on the spot.

Dye-sublimation is starting to become particularly useful for event photographers as it allows them to produce and sell lab quality prints at the event they are attending very quickly with a minimal amount of hardware.

External links

- Kodak Dye-sublimation printing (<http://www.kodak.com/global/en/professional/products/printers/dyeSub/thermalPrinters.jhtml>)
- Hitouch Imaging Technologies (<http://www.hitouchimaging.com/Products/PhotoPrinters.asp>)
- Mitsubishi Electric (<http://www.mitsubishielectric.com.sg/video/digital.asp>)

Retrieved from "http://en.wikipedia.org/wiki/Dye-sublimation_printer"

Categories: Computer printers | Non-impact printers

-
- This page was last modified 22:04, 12 April 2006.
 - All text is available under the terms of the GNU Free Documentation License (see **Copyrights** for details). Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc.